UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/547,791	04/12/2000	Steven Beck	1481.0170000	5403

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EXAMINER
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ART UNIT	PAPER NUMBER
3623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.		Applicant(s)
Office Action Summary	09/547,791		BECK ET AL.
	Examiner		Art Unit
	Eric T. Shaffer		3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>06 January 2004</u> .

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 April 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _ .	6) ☐ Other: .

DETAILED ACTION

1.   This communication is in response to the amendments filed January 6, 2004.

Summary Of Instant Office Action

2.   Applicant's arguments, filed January 6, 2004, concerning claims 1 – 28 in the Office

Action mailed July 2, 2003, have been considered and deemed unpersuasive.

3.   None of the claims have been cancelled by the applicant and the applicant has not added

any new claims. Claims 1 – 28 are pending and are prosecuted in the response set out below.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

5.   Claims 15 – 28 are rejected because the method claims of the invention are directed to

non-statutory subject matter.

In order for the claimed invention to be statutory subject matter, the claimed invention

must fall within the technological arts. In the present case, claims 15 - 28 are directed to

methods of forecasting, processing and accessing a database, which does not use or effect

technology to perform the claimed method.

The invention as recited in the claims is merely an abstract idea that is not within the

technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural

phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the

"progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences,

for example) and therefore are found to be non-statutory subject matter.

For a process claim to pass muster, the recited process must somehow affect, effect, or be

effected by technology. For instance, a mere recitation in the preamble (i.e., intended use) or

mere implication of employing a machine or article of manufacture to perform some or all of the

recited steps does not confer statutory subject matter to an otherwise abstract idea. A mere

intended or nominal use of a component, albeit within the technological arts, does not confer

statutory subject matter to an otherwise abstract idea if the component does not affect or effect

the underlying process. Specifically, claims 15 - 28 do not affect, effect, or are effected by

technology, and thus do not recite statutory subject matter.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   Claims 1 - 28 are is rejected under 35 U.S.C. 103(a) as being unpatentable over McCabe

et al (US 6,453,216) in view of Ton (US 6,397,162).

As per Claims 1, 8, 15 and 22, McCabe teaches a weather and water level based system

for forecasting renovation and management of a body of water. McCabe teaches using weather

data and vegetation soil moisture data to manage the volume of water used or available in storage

for use in the irrigation of agricultural products or vegetation ("if an irrigation system is operated

according to the method of the present invention, then the largest possible portion of water

needed by the crop of turf will be contributed by natural rainfall and the least irrigation water

will be used, consistent with maintaining a proper level of soil moisture for the crop or turf being

irrigated", column 6, lines 48 - 54). McCabe also teache management of a water level on a body

of water by teaching a system ("that conserves water irrigating the zone that requires the greatest

volume of water last", column 5, lines 35 -37), wherein the body of water is the body of water

inherent in an irrigation system ("Station A will have dispersed 1200 gallons during the first

hour", column 12, lines 12 - 14), wherein 1200 gallons constitutes a body of water and the

volume of water dispensed from the body of water is given by the formulas (column 12, lines 25

- 27).

The system and method comprising:

means for accessing a database having stored therein data for analyzing the body of

water, wherein said database includes weather history data (Table 1, "rainfall in inches per

month") and (Table 3, "temperature, rain, avg wind"), weather forecast data ("modifying

watering schedule based on a high rain probability", column 10, lines 47 - 48) and body of water

history data (figure 2);

a renovation system to execute a request from a user to analyze the body of water for

renovation and management by using said weather history data, said weather forecast data and

said body of water history data to determine potential problems for the body of water and

potential solutions for said potential problems. McCabe teaches using weather history data and

rainfall measurements to determine how much water to use in the irrigation of a field, "irrigation

controllers apply water by controlling the amount of time a station is on in a fixed number of

minutes, seconds, or other base time. The amount of water applied is based upon an estimate, a

guess, or a previous measurement" (column 13, lines 16 - 18).

McCabe et al however, does not specifically teach terrestrial vegetation history data or

terrestrial vegetation forecast data.

Ton teaches a terrestrial vegetation-based device for measuring evapotranspiration and

using this measurement to control an irrigation system. Ton also does in fact teach terrestrial

vegetation history data and terrestrial vegetation forecast data as a range of past values that are

stored in the system database and used as a standard to predict and compare future vegetation

measurements against (column 7, lines 39 – 45, "processed parameter of the plant's environment

is realized on display 52 by a first displayed area 54 of a first color selected among at least two

first colors, wherein each of these first colors represents a range of that parameter of the plant's

environment. Similarly, a processed parameter of the plant itself is realized by a second

displayed area 56 of a second color selected among at least two second colors, wherein each of

these second colors represents a range of that parameter of the plant's itself.")

It would have been obvious to one of ordinary skill in the art of irrigation systems at the

time the invention was made to combine the McCabe irrigation system with the Ton irrigation

system in order to develop an irrigation management system that used a wide variety of measures

to determine when and how much to water a field of crops. It would be obvious to create this

invention because combining vegetation measurement with water level measurement would

increase the number of parameters involved in determining when crops should be irrigated and

would increase the accuracy of such a device. Increasing the number of methods and factors of

measurement would reduce the level of error by presenting more facts to substantiate a

conclusion, and would also increase the level of accuracy of the combined device, thereby

improving the performance of a water level based and vegetation based irrigation management

system.

8.   As per Claims 2, 9, 16 and 23, McCabe teaches a system and method, wherein said

database data are either passed in via a front end system, collected by said renovation system, or

derived by said renovation system. Database data passed into a database via a front-end system

is anticipated by McCabe el al, which teaches "the present invention next uses whatever weather

inputs and soil inputs are available to calculate a start time that is proper to allow the irrigation

system to deliver the necessary water" (column 6, lines 34 - 37).

9.   As per Claims 3, 10, 17 and 24, McCabe teaches a system and method, comprising a

front end system to receive a request from a user to analyze the body of water for renovation and

management, wherein the front end system is a web server. Sending data messages to remote

locations by way of a communications network, one type of such communications networks

being a web server, is anticipated by McCabe el al, which teaches "one or more messages are

sent via various remote data communication methods to one or more irrigation controllers"

(column 10, lines 54 - 56).

10.   As per Claims 4, 11, 18 and 25, McCabe teaches a system and method, wherein said

renovation system comprises:

        processing modules for performing processing functions ("they are simply on or off

sensors", column 3, line 33) where ("if the probability of rain is sufficiently high then there is

little risk to the plants if the irrigation event is skipped", column 10, lines 59 – 61). The formal

rules that use specific data comparison operators are taught by the rule "Delay a full day if the

Probability > 90%, reduce irrigation a special fraction when the 60% probability <= 90%"

(column 11, lines 2 - 7).

administration modules for performing administration functions; Creating software to

perform the administrative function of time scheduling is anticipated by McCabe el al, which

teaches "this method of scheduling can also be combined with end time based scheduling to

achieve even greater water savings" (column 12, lines 36 - 38).

background modules for performing background functions required by said processing

modules and said administration modules. The background module of a clock is anticipated by

McCabe el al, which teaches "when the controller's clock matches or exceeds the start time, the

controller activates appropriate hardware" (column 11, lines 11 - 12).

11.   As per Claims 5, 12, 19 and 26, McCabe teaches a system and method, wherein said

database includes a list of observable problems and a list of fundamental problems. An

observable problem is anticipated by McCabe el al, which teaches "use of these typical or

average crop coefficients to calculate the amount of water to apply to a crop could result in either

over or under watering in a real world situation" (column 9, lines 57 - 60), while fundamental

problems are anticipated by McCabe el al, which teaches "methods to determine the amount of

water to apply to a station can suffer from problems when used with newly planted landscapes"

(column 13, lines 31 - 34).

12.   As per Claims 6, 13, 20 and 27, McCabe teaches a system and method, wherein said

processing modules comprise:

an analyzer module to determine the impact said weather history data had on actual

observable problems of the body of water; The use of weather inputs to determine the impact on

water supply problems is anticipated by McCabe el al, which teaches "the method of the present

invention next uses whatever weather inputs and soil inputs are available to calculate a start time

that is proper to allow the irrigation system to deliver the necessary water" (column 6, lines 34 -

37).

a diagnosis module to determine actual fundamental problems for the body of water

based on said actual observable problems; Use of observable problems to analyze and solve

problems related to the actual problems of a water supply is anticipated by McCabe el al, which

teaches "irrigation controllers using moisture sensors, evapotranspiration and/or other methods to

determine the amount of water to apply to a station" (column 13, lines 31 - 34).

a remedy module to determine the impact said weather forecast data and said terrestrial

vegetation history data will have on said actual fundamental problems based on the impact said

weather history data and said terrestrial vegetation history data had on said actual observable

problems, and then to determine, based on the impact said weather forecast data and said

terrestrial vegetation forecast data will have on said actual fundamental problems, one or more

solutions for said actual fundamental problems; Using weather and crop/soil data to remedy the

observable problem of determining how much water to apply to crops is anticipated by McCabe

el al, which teaches "the method of least squares regression analysis, or other effective curve

means, is used to determine an actual in situ characteristic curve for the specific crop/soil

combination being irrigated. Next this in situ characteristic curve is used to calculate the amount

of water required to bring the soil moisture or tension from its measured present value to the

desired value for each watering event" (column 9, line 65 – column 10, line 36).

a compliance module to determine compliance for each of said solutions; Using data to

initiate action which enables a water application system to comply with a chosen set of irrigation

solutions is anticipated by McCabe el al, which teaches "measured rainfall can be used to stop,

delay, and/or adjust the amount of remaining water to apply to meet the needs of the plants while

minimizing the amount of irrigation water used" (column 12, lines 49 - 53).

a cost module to determine for each of said solutions a list of factors that will aid the user

in the renovation and management of the body of water. The factors used to manage how large a

body of water is needed to maintain crops is anticipated by McCabe el al, which teaches "this

method of the invention requires a measurement of water applied, requires measurement of soil

tension and/or moisture content and water events must be qualified to remove erroneous values"

(column 10, lines 40 - 46).

13.   As per Claims 7, 14, 21 and 28, McCabe teaches a system and method, wherein said list

of factors include one or more of estimated cost, years to complete, possible funding, and timing

of implementation. Timing of implementation as per the fixed time required to apply water is

anticipated by McCabe el al, which teaches "controllers apply water by controlling the amount of

time a station is on a fixed number of minutes, seconds, or other time base" (column 13, lines 15

- 17).

Response to Amendments

14.   Applicant's arguments filed May 12, 2003 have been fully considered, but the same are

not persuasive.

a) Applicant argues that the claimed invention recites a technological device. However,

the applicant's claim language does not teach any actual technology, such as a computer,

processor or apparatus, that could be considered within the technological arts. Incorporation of a

database is not sufficient to be considered technology, as a database can be constructed in a

paper format that does not constitute a technological device.

b) Applicant argues that the McCabe teaching of a weather and water level based system

for forecasting renovation and management of a body of water is not what is recited in the

applicant's claim language. However, the claim language clearly states means for accessing a

database that includes weather history data and modifying how much water is dispensed to

irrigate crops based on a rainfall weather forecast.

c) Applicant argues that the McCabe teaching of a using weather data and vegetation soil

moisture data to manage the volume of water used or available in storage is not what is recited in

the applicant's claim language. However, the applicant does claim analyze the body of water for

renovation and management by using weather history data, herein analysis can be interpreted to

mean a study of past historical data for trends in weather that adds water to a body of water and

moisture data can be interpreted to mean any weather related activity adds moisture to a body of

water in an irrigation system, such as rainfall.

d) Applicant argues that the McCabe in combination with Ton does not teach "means for

accessing a database having stored therein data for analyzing the body of water, wherein said

database includes weather history data, weather forecast data, terrestrial vegetation history data, terrestrial vegetation forecast data and body of water history data". However, the combination of McCabe and Ton do teach which is fully consistent and in line with the overly broad concepts of "vegetation forecast data" and "body of water history data". Only by more narrowly specifying what exactly constitutes "vegetation forecast data" or "body of water" or "history data" can the applicant legitimately claim a specific invention.

e) Applicant argues that the McCabe in combination with Ton a system that uses historical rainfall and weather data that is not in line with what the applicant is claiming. However, the McCabe and Ton combination teach a device that is fully consistent with the broad claim language of "analyze the body of water", "using weather history data" and "determine potential solutions for potential problems". Only by more narrowly specifying exactly how one of ordinary skill in the art would perform an analysis of a body of water, by specifying what water history data, or how one determines what constitutes a potential problem and how a potential solution to said problem is derived, can the applicant legitimately claim a specific invention.

f) Applicant argues that McCabe in combination with Ton an irrigation management system that determines when and how much to water a field of crops does not teach the claimed invention of a weather and terrestrial vegetation-based system for forecasting renovation and management for a body of water. However, using rainfall weather data to determination of how much or how little water needs to be is dispensed from an existing body of water in order to irrigate crops does teach a management of what volume of water must be removed from a body

of water. Similarly, rainfall forecasts teach management of how much water will be added to an existing irrigation body of water.

In light of the above stated facts, examiner respectfully states that applicant's arguments have been fully considered, deemed unpersuasive, and the rejections under the prior Office Action, mailed July 2, 2003, are maintained.

Conclusion

15.   THIS ACTION IS MADE FINAL. See MPEM 706.07(a). Applicant is reminded of the

extension of time policy as set forth in 37 1.136(a). The prior art made record of and not relied

upon is considered pertinent to applicant's disclosure.

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than SIX MONTHS from the date of final action.

16.   Any inquiry concerning this communication or earlier communications from the

Examiner should be directed to Eric Shaffer whose telephone number is (703) 305-5283. The

Examiner can normally be reached on Monday-Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tariq Hafiz can be reached on (703) 305-9643. The fax number for the organization

is (703) 305-0040/308-6306

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Receptionist whose telephone number is (703) 305-3900.

Eric Shaffer

February 24, 2004

Susanna Diaz
Susanna Diaz
Primary Examiner
AU. 3623